

Serial Number: 10/065,503

IN THE CLAIMS

Amend claims 1, 2 and 12 as follows:

- [1 (c1)] (Currently Amended) Apparatus for performing ~~parallel~~ simultaneous tests (of logic and memory) for semiconductor devices having logic and memory macro with BIST circuits, comprising:
voltage isolation elements for logic and memory circuits having individual separate isolated independent clocking paths to each logic and memory macro circuits;
a clocking system including clocking isolation elements for logic and memory circuits;
scan chain bypass isolation elements (⇌) to enable and disable the BIST which tests the memory macro circuits while the logic scan chain results are read out.
- [2 (c2)] (Currently Amended) The apparatus of claim 1 wherein the bypass isolation elements are initiated by a control signal wherein the logic tests are done by scan chain.
- [3 (c3)] (Original) The apparatus of claim 2 wherein the control signal is provided by a primary input from control circuit.
- [4 (c4)] (Original) The apparatus of claim 2 wherein the control signal is provided by a latch.
- [5 (c5)] (Original) The apparatus of claim 2 wherein the control signal is applied to a latch.
- [6 (c6)] (Original) The apparatus of claim 5 wherein the latch provides the control signal to a multiplexer in each memory macro.

BUR920010217US1

Serial Number: 10/065,503

- [7 (c7)] (Original) The apparatus of claim 6 wherein the control signal places the apparatus into bypass mode by selecting a scan in signal which loads logic test patterns into the BIST circuits.
- [8 (c8)] (Original) The apparatus of claim 7 wherein after the BIST is completed the apparatus is taken out of bypass mode and the results are unloaded.
- [9 (c9)] (Original) The apparatus of claim 6 wherein the clocking system includes a memory test lock which allows a logic test pattern to be loaded and unloaded independent of the memory clock.
- [10 (c10)] (Original) The apparatus of claim 9 wherein a signal to the clocking system is applied by an external tester to a clock multiplier and control circuit.
- [11 (c11)] (Original) The apparatus of claim 9 wherein a signal to the clocking system is applied by an external tester to a clock generator located on the semiconductor device.
- [12 (c12)] (Currently Amended) A method for performing ~~parallel~~ simultaneous tests of logic and memory on a semiconductor device having logic with BIST and memory circuits comprising:
- separating the logic and memory circuits using isolation elements;
 - clocking the logic and memory circuits;
 - enabling and disabling the BIST scan chain bypass isolation elements; and
 - testing the memory circuits while the logic scan chain results are read out.
- [13 (c13)] (Original) The method of claim 12 including testing the bypass isolation elements by a control bypass signal.

BUR920010217US1

Serial Number: 10/065,503

[14 (c)(4)] (Original) A method for performing parallel tests of logic and memory macro on a semiconductor device having logic with BIST and memory circuits comprising:

- verifying scan chain and BIST operation;
- loading BIST patterns using global clocking;
- placing the device into a bypass mode wherein the memory macro circuits are isolated from the scan chains;
- generating separate test clock signals to both memory macro circuits and logic circuits; and
- running the scan chains in parallel with BIST.

BUR920010217US1